

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A decision method for inter-frequency hard handoffs in a WCDMA system, using ~~the~~ an event-triggered reporting mode, ~~the~~ triggering events including ~~the following basic events~~: Event 2F (having a triggering criteria of the signal quality on the current frequency point is higher than a certain threshold value), Event 2D (having a triggering criteria of the signal quality on the current frequency point is lower than a certain threshold value), and Event 2A (having a triggering criteria of the best frequency point changes, that is, there is a non-current frequency point on which the signal quality is better than the signal quality on the current frequency point), the decision method ~~being~~ characterized in ~~comprising at least the following steps~~ comprising:

querying, by a ~~the~~ RNC (Radio Network Controller), ~~queries the~~ specific conditions of ~~the a~~ location where ~~the a~~ UE (user equipment) is, and ~~performs~~ performing inter-frequency measurements, specifying ~~the~~ required measurement events to be 2F and 2D and ~~the~~ relative parameters;

sending, by the RNC, ~~sends~~ measurement control commands to the UE, specifying the parameters that the UE is required to measure;

receiving, by the UE, ~~receives~~ the control commands and ~~performs~~ performing the measurement and evaluation, and ~~reports~~ reporting the measurement results when the triggering criteria for the required events are met; and

receiving, by the RNC, ~~receives~~ the reported measurement results from the UE, and ~~begins~~ beginning to perform ~~the decisions~~ actions according to the specific events reported by the UE and the RNC's specific decision and execution process.

2. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 1, ~~characterized in that, said~~ further comprising:

querying, by the RNC, ~~querying~~ the specific conditions of the location where the UE(~~user equipment~~) is and performing inter-frequency measurements ~~is activating~~ in which a compression mode is activated to perform the measurements.

3. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 1, ~~characterized in that, said~~ further comprising:

querying, by the RNC, querying the specific conditions of the location where the UE(~~user equipment~~) is and performing inter-frequency measurements ~~is performing in which~~ the measurements are performed without activating a compression mode ~~at the moment~~.

4. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 1, ~~characterized in that, wherein the said~~ UE receives the control commands and performs the measurements and evaluation, the evaluation at the UE side being based on the following formula:

$$Q_{\text{carrierj}} = 10 \cdot \text{Log}M_{\text{carrierj}} = W_j \cdot 10 \cdot \text{Log} \left(\sum_{i=1}^{N_{Aj}} M_{ij} \right) + (1 - W_j) \cdot 10 \cdot \text{Log}M_{\text{Bestj}} - H,$$

wherein:

Q_{carrierj} is the dB value of estimated quality on frequency j;

M_{carrierj} is the estimated quality on frequency j;

M_{ij} is a measurement result of cell i in the active set on frequency j (in case of a non-used frequency point, they are the cells in the virtual active set);

N_{Aj} is the number of cells in the active set on frequency j;

M_{Bestj} is the measurement value of the best cell on frequency j;

W_j is the weight factor for frequency j[[;]].

5. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 1, ~~characterized in that, wherein~~ said RNC's specific decision and execution process includes ~~the following~~:

A. when Event 2F is triggered, the RNC requires the UE to perform the decision on Event 2D;

B. when Event 2D is triggered, the RNC requires the UE to perform the decisions on Event 2F and Event 2A;

C. when Event 2A is triggered, the RNC makes a decision according to the results of ~~the~~ an admission control and resource allocation and sends the corresponding message to the UE, and after the hard handoff is performed successfully, the UE performs again the decisions on Event 2F and 2D under the control of the RNC.

6. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 5, ~~characterized in that,~~ wherein after ~~said~~ the Event 2F is triggered, the RNC can command the UE to stop using a compression mode to perform the inter-frequency measurements, and perform the measurements of the signal qualities in the cells only on the currently used frequency.

7. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 5, ~~characterized in that,~~ wherein after ~~said~~ the Event 2D is triggered, the RNC can command the UE to activate a compression mode to perform the inter-frequency measurements, performing the measurements of the signal qualities in the cells on other frequency points.

8. (Currently Amended) The decision method for inter-frequency hard handoffs according to Claim 1, ~~characterized in that,~~ wherein during the RNC's specific decision and execution process, there is a difference between the thresholds of Event 2F and Event 2D, ~~which usually takes the value of 2 dB.~~

9. (New) A WCDMA hard handoff system, which uses an event-triggered reporting mode, in which triggering events include: Event 2F (having a triggering criteria of the signal quality on the current frequency point is higher than a certain threshold value), Event 2D (having a triggering criteria of the signal quality on the current frequency point is lower than a certain threshold value), and Event 2A (having a triggering criteria of the best frequency point changes, that is, there is a non-current frequency point on which the signal quality is better than the signal quality on the current frequency point), the WCDMA hard handoff system comprising:

a Radio Network Controller (RNC); and

a User Equipment (UE),

wherein the RNC includes:

querying means for querying specific conditions of a location where the UE is, and performing inter-frequency measurements, specifying required measurement events to be 2F and 2D and relative parameters; and

sending means for sending measurement control commands to the UE, specifying the parameters that the UE is required to measure; and

wherein the UE includes:

means for performing frequency measurements specifying required measurement events to be 2F and 2D and relative parameters, in accordance with the specific conditions queried by the querying means;

means for receiving the control commands sent by the sending means and performing the measurement and evaluation;

means for reporting the measurement results to the RNC when the triggering criteria for the required events are met,

wherein the RNC further includes:

receiving means for receiving the reported measurement results from the UE;

and

performing means for performing actions according to the specific events reported by the UE and according to a specific decision and execution process of the RNC.

10. (New) The decision method for inter-frequency hard handoffs according to Claim 9, wherein said RNC's specific decision and execution process includes:

A. when Event 2F is triggered, the RNC requires the UE to perform the decision on Event 2D;

B. when Event 2D is triggered, the RNC requires the UE to perform the decisions on Event 2F and Event 2A;

C. when Event 2A is triggered, the RNC performs an action according to the results of an admission control and resource allocation and sends the corresponding message to the UE, and after the hard handoff is performed successfully, the UE performs again the decisions on Event 2F and 2D under the control of the RNC.

11. (New) The decision method for inter-frequency hard handoffs according to Claim 10, wherein after the Event 2F is triggered, the RNC can command the UE to stop using a compression mode to perform the inter-frequency measurements, and perform the measurements of the signal qualities in the cells only on the currently used frequency.

12. (New) The decision method for inter-frequency hard handoffs according to Claim 10, wherein after the Event 2D is triggered, the RNC can command the UE to activate a compression mode to perform the inter-frequency measurements, performing the measurements of the signal qualities in the cells on other frequency points.